# ABRITES Diagnostic for OPEL/Vauxhall

# User Manual

## Overview

ABRITES Diagnostics for OPEL/Vauxhall is a professional software for diagnostic of OPEL/Vauxhall vehicles. It is capable to perform a diagnostic of any unit, which operates under one of the following protocols: Keyword 82, Keyword 2000 and GMLAN. It provides some unique functions, which are not supported by any other diagnostic tool.

**Standard diagnostic functions:**

- Read identification
- Read fault codes
- Clear fault codes
- Device scan
- Data Display / Measured values
- Security code programming
- Vehicle identification number programming
- Programming CAN configuration
- Injector Programming
- Program Immobilizer functions
- Program Immobilizer outputs

**Special functions:**

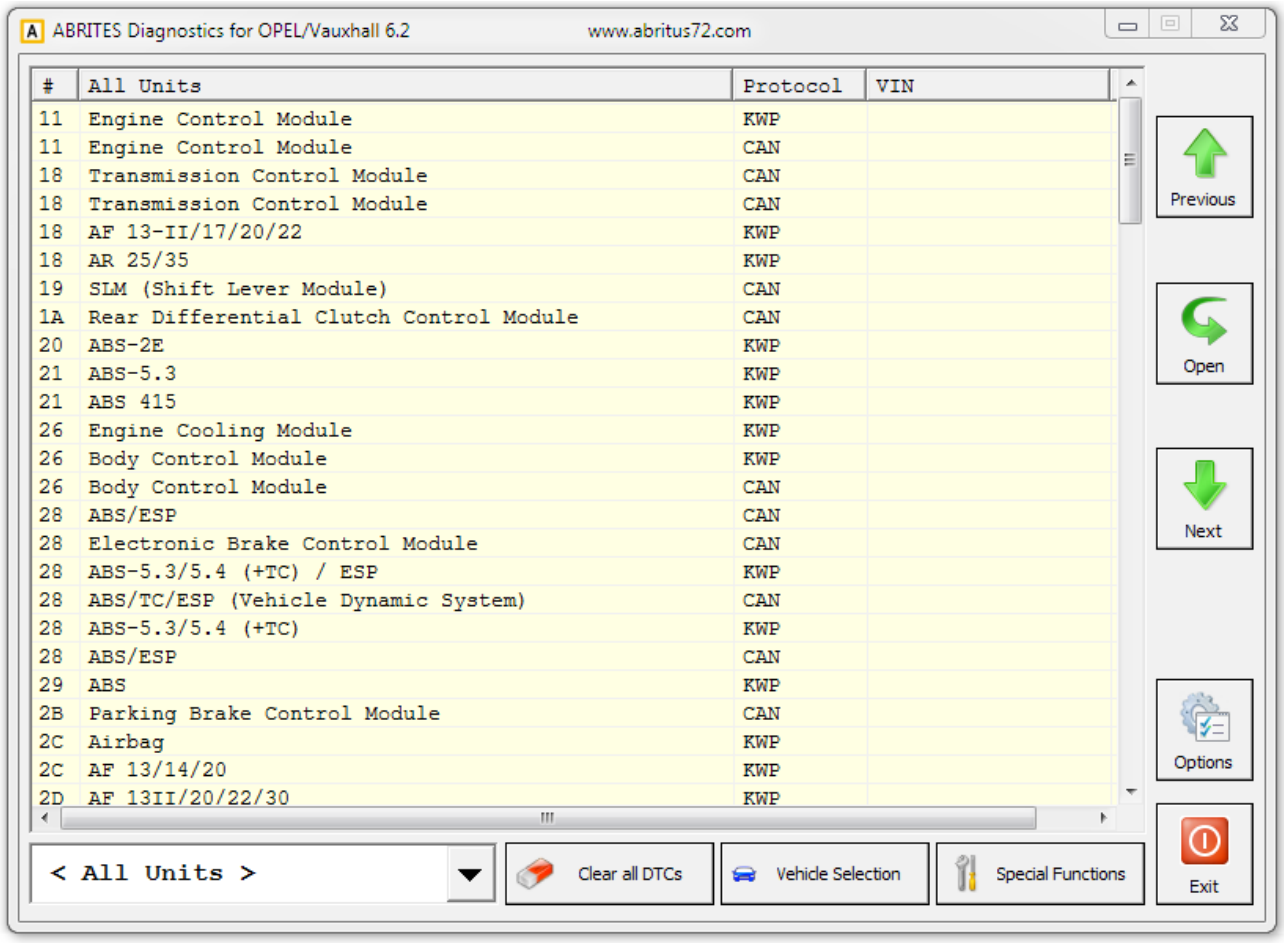
- Read security code
- Key Learning
- Read/Write EEPROM
- Engine Flasher
- Read Radio Code/Reset Counter
- Erase Airbag Crash Data
- Dump Tool

**Advanced functions:**

- Security Access
- Custom Request
- Custom Query / Read ECU memory

## Running software

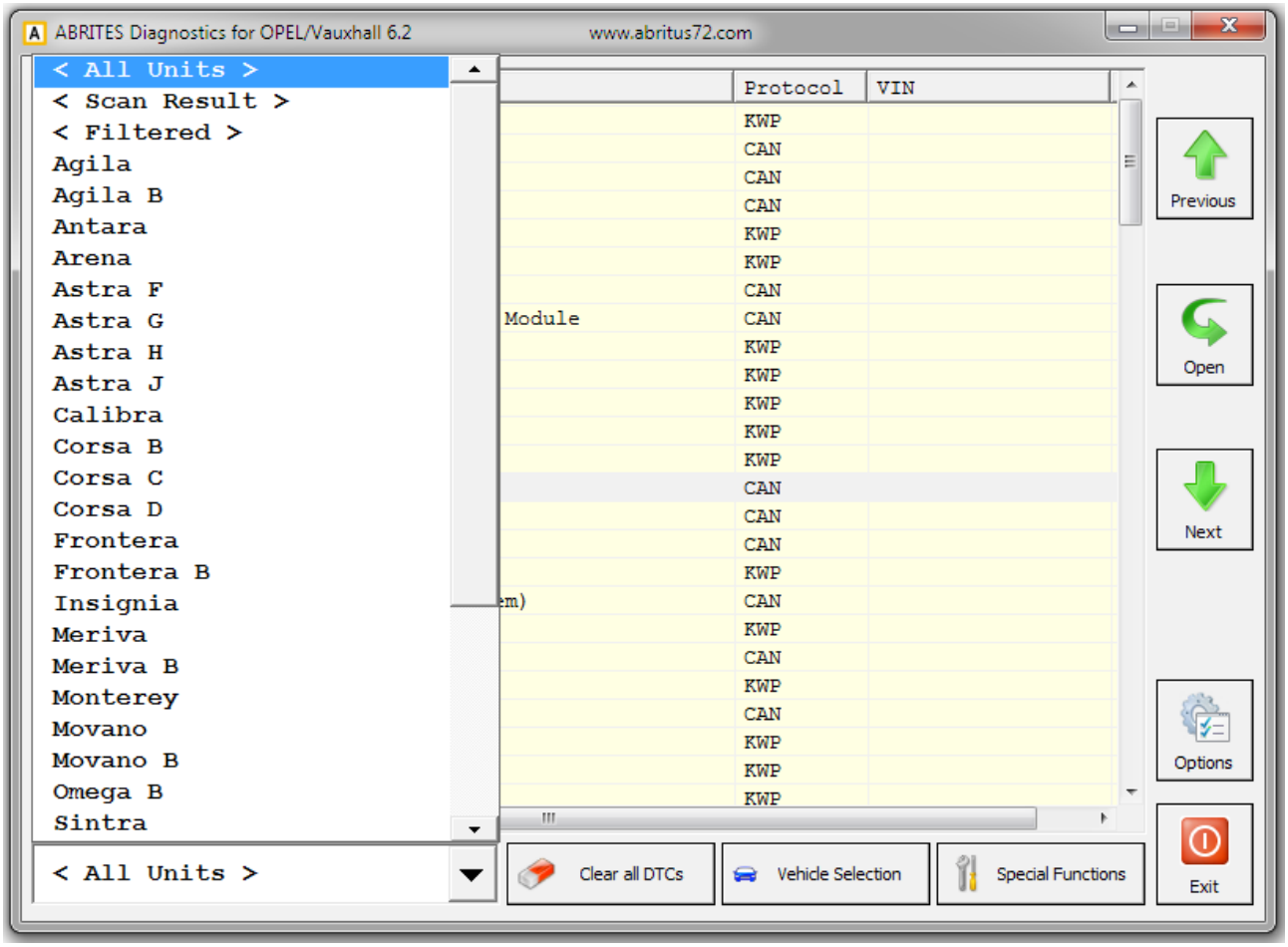
When you run ABRITES Diagnostics for OPEL/Vauxhall it will try to detect automatically the appropriate hardware interface and will connect with it. If the connection failed a message box with the explanation of the problem will appear.




By default, when ABRITES Diagnostics for OPEL/Vauxhall is started in the main list are displayed all available electronic control units. You can reduce the number of displayed units by specifying the vehicle context. To change the vehicle context select a desired model.

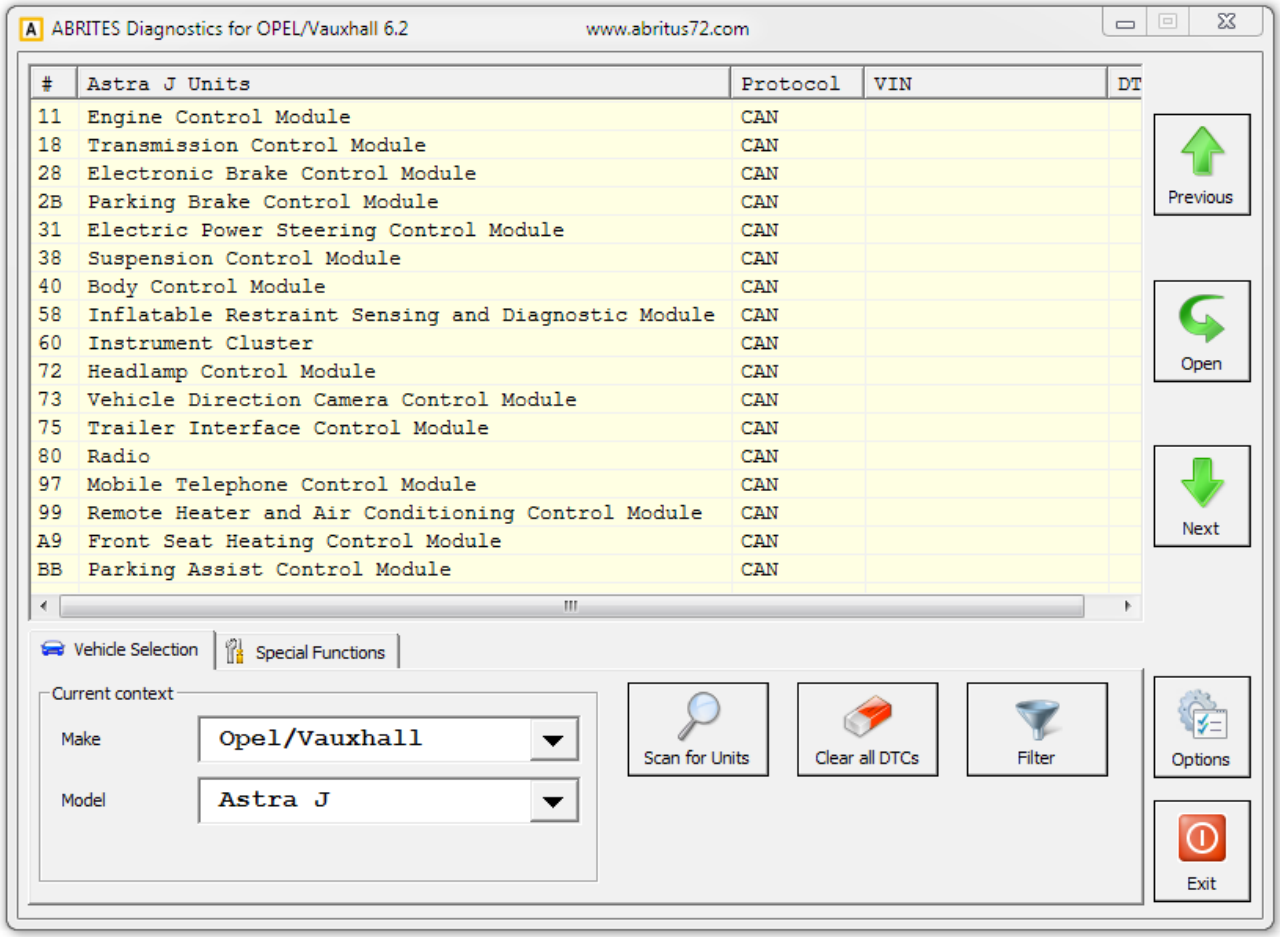
There are three groups of device units which are not part of any specific vehicle. As you can see from the next picture, these are: All Units, Scan Result and Filtered.

- The group "All Units" as you can guess from its name will display you the list of all units which are recognizable by the software.
- "Scan Result" will show you the list of the last scanned units. Refer to the Scanning section.
- The group "Filtered" contain a list of units which correspond to a specific filter pattern. A new filter pattern can be set using the filter button.



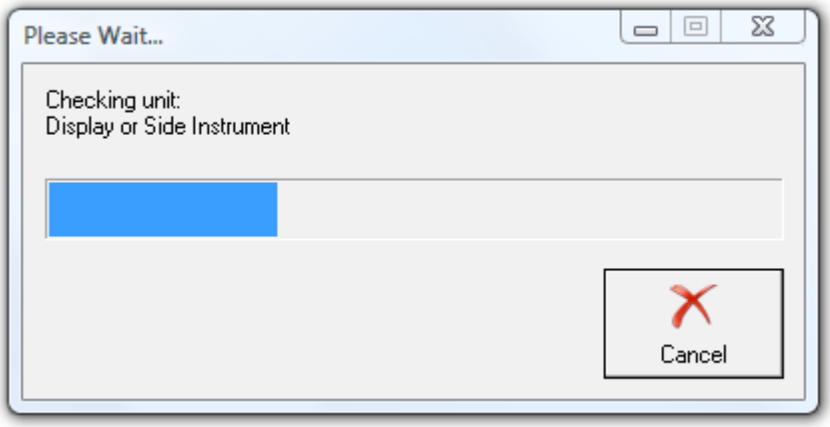

**Clear all DTCs**

Clear All DTC is a helpful function when you want to delete the errors from all units in a vehicle at once. The behavior of this function is to clear DTCs of all currently displayed in the main list units.




## Device Scanning

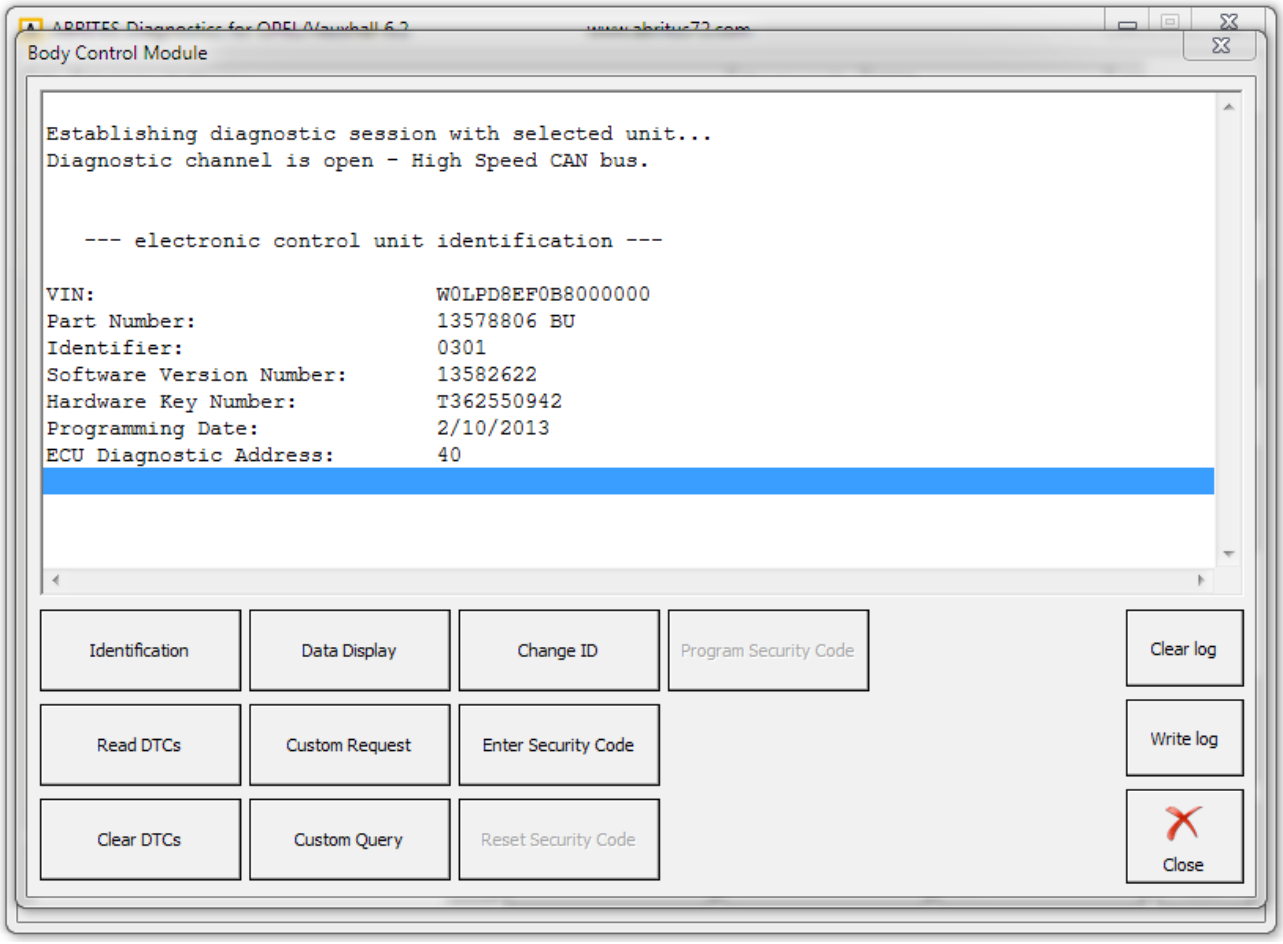
Device scanning function is helpful when you want to perform a quick DTC check of all available device units in a vehicle. When you click on the "Scan for Units" button on the “Vehicle Selection” screen, a progress window will appear. The behavior of the scanning can be changed by the "Device Scanning" option.



## Diagnostic

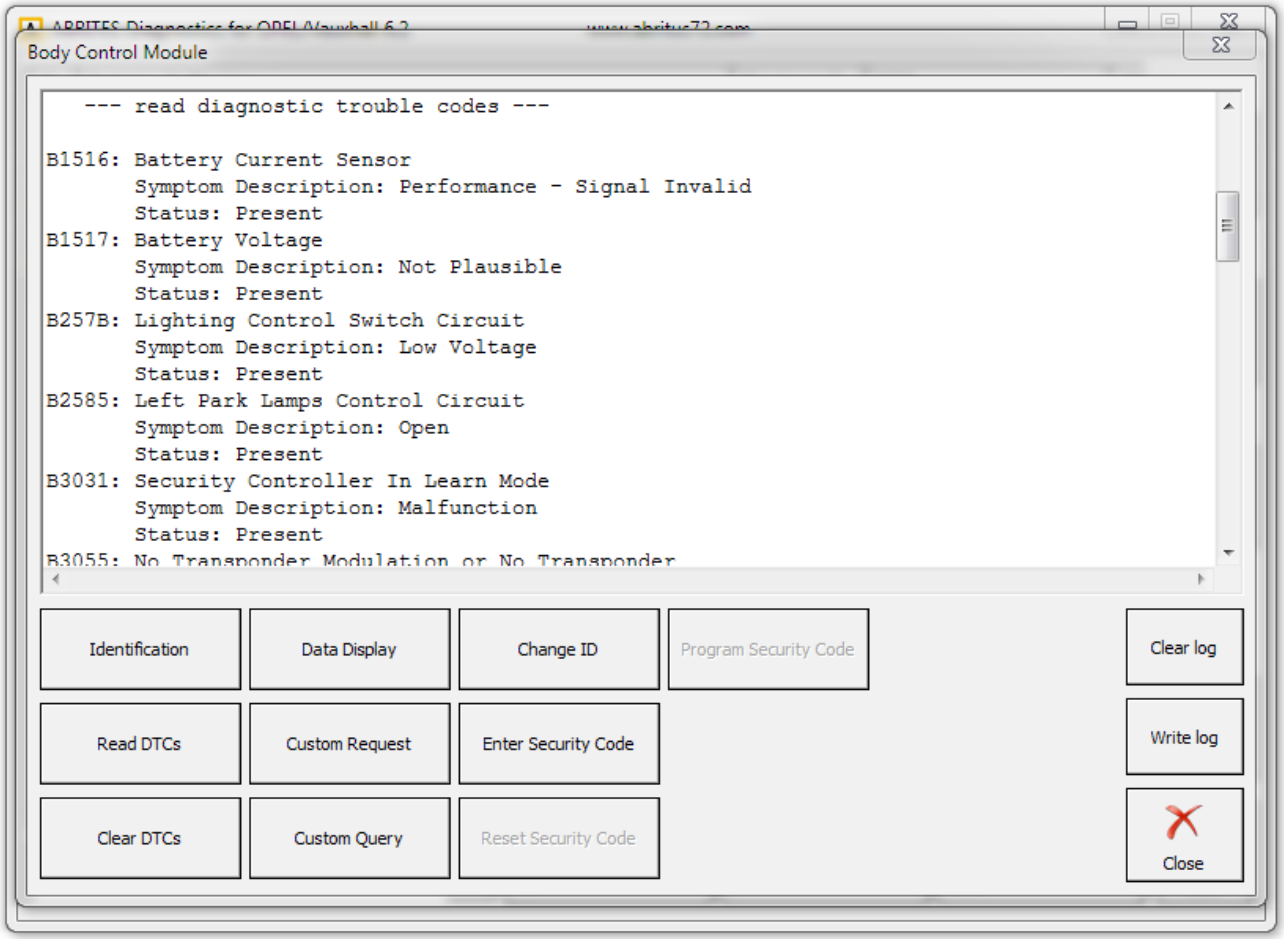
Double clicking on a electronic control unit from the list in the main application window will initiate a diagnostic connection with the selected device and will open a diagnostic window. When the diagnostic session with the unit is established successfully, the identification of the device will be displayed.

## Identification



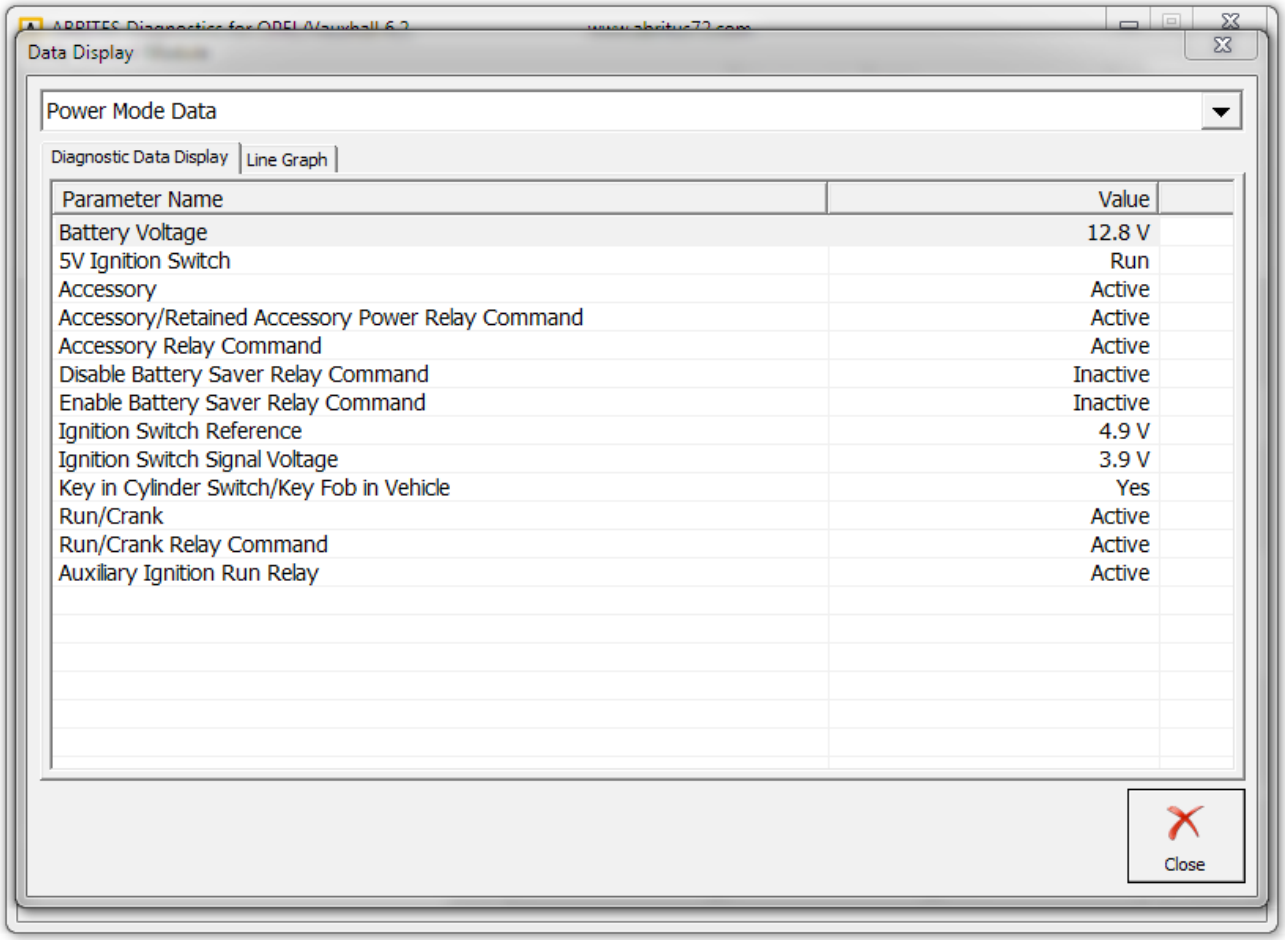

## Read DTC and Clear DTC

The two main diagnostic functions are Read and Clear diagnostic trouble codes. They can be executed by clicking on the buttons Read DTCs or Clear DTCs respectively.



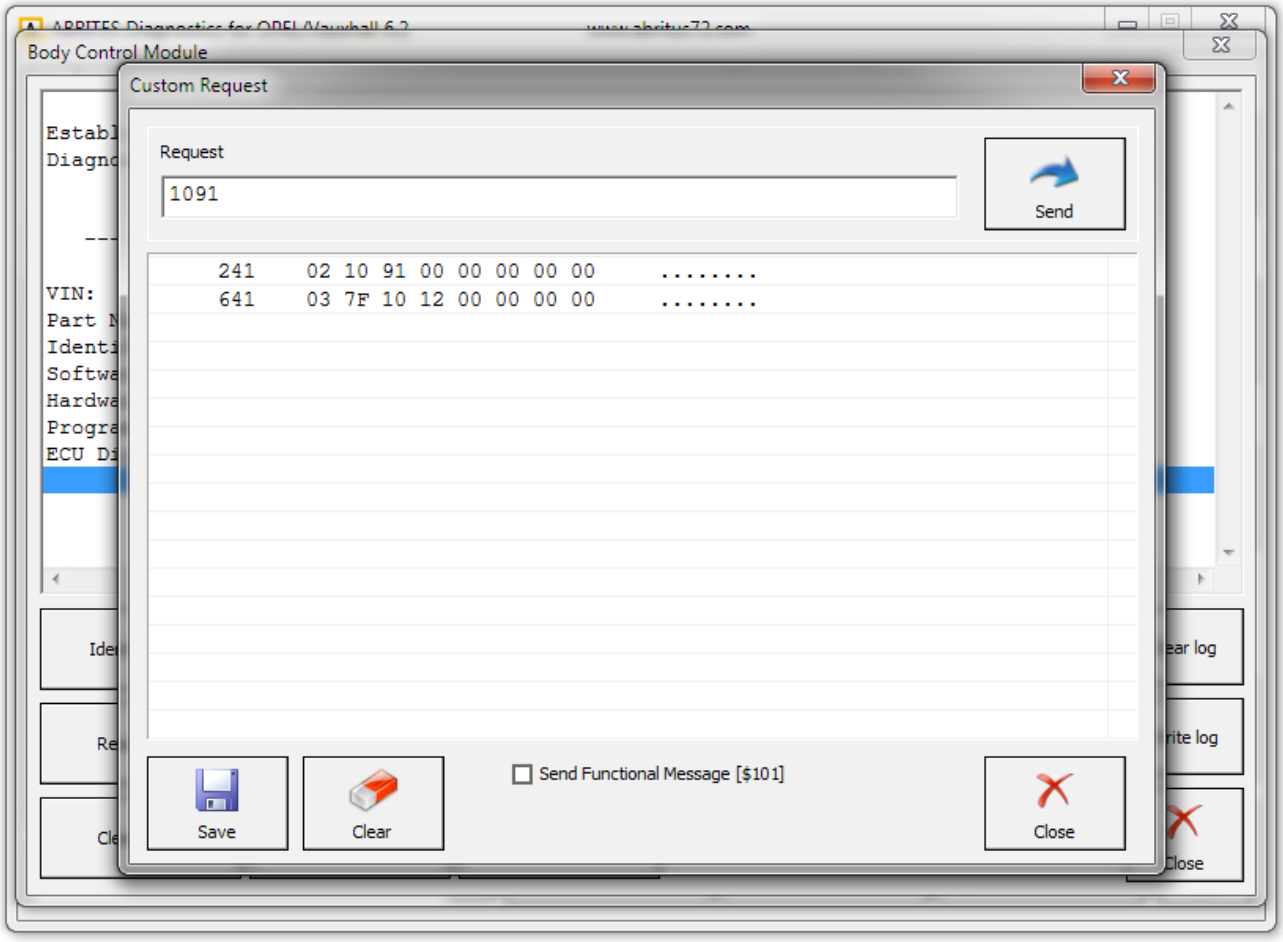

## Data Display

The Data Display button will open a new window, which will show you in real-time the measured values of the unit.




## Custom Request

Custom Request is an advanced diagnostic function allowing to send a diagnostic message to an electronic control unit. In the request field you have to enter the data of the diagnostic message. The software will pack the data using an appropriate transport protocol before transmitting the query to the device.




## Custom Query

Custom Query is a function, which allow you to execute a previously defined diagnostic services using custom parameters.

Read Memory By Address is a part of Custom Query, which allow you to execute the diagnostic service $23 of devices operating under CAN or KWP2000. The parameters which you can set are the start address, block size and total size. The meaning of these parameters is: Read memory with size equal to 'total size' beginning from 'start adress' on blocks with 'block size'.

By default the numbers entered as parameters are interpreted as decimals. If you want to enter a hexadecimal number you should add a suffix 'h' to the number or a prefix '0x'.

NOTE: Most of the devices require a security access before allowing a memory access.

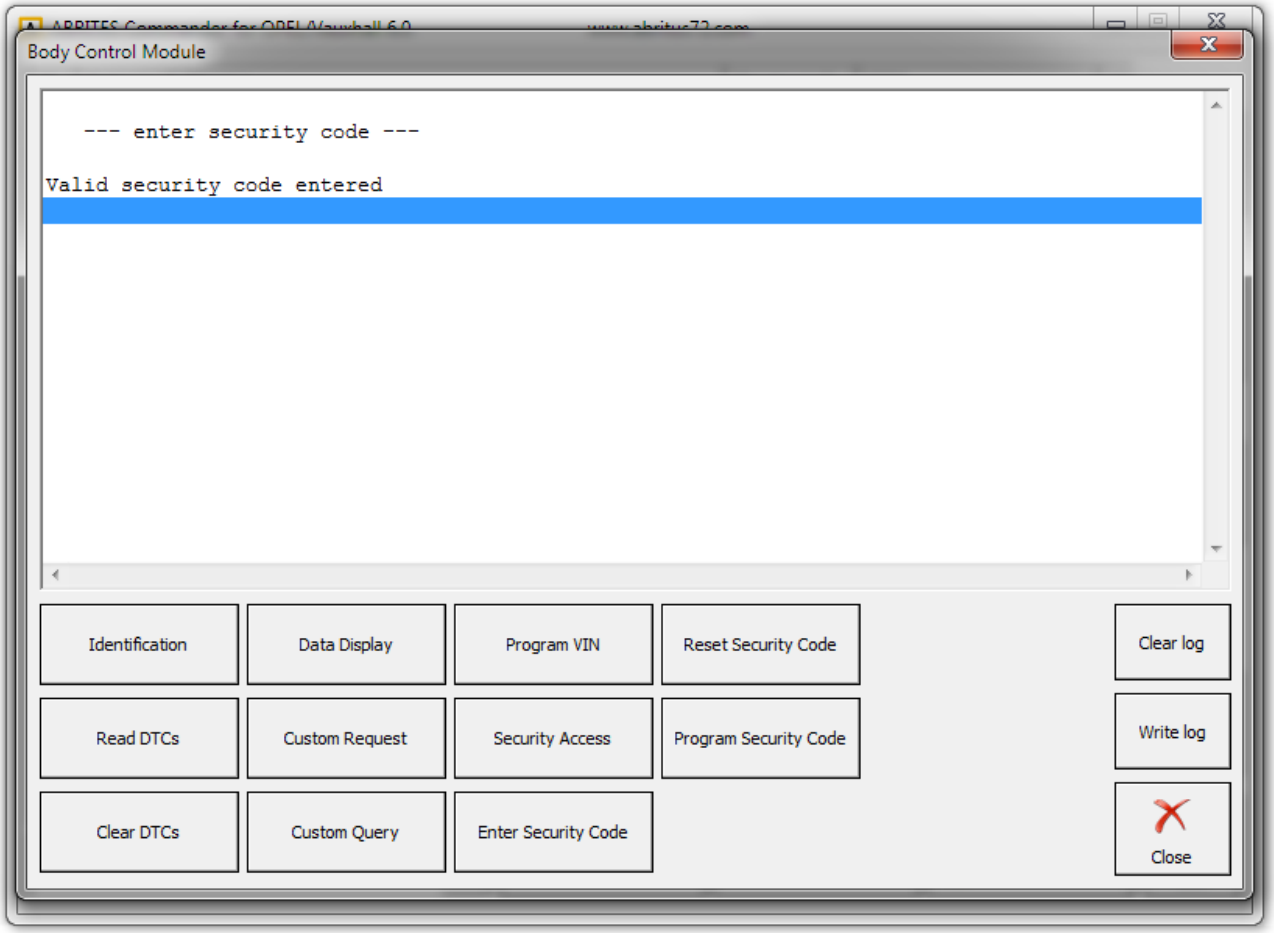
## Memory scanning

In general only specific parts from the memory space are accessible. If you are performing a diagnostic of an unknown device and don't know what its memory map is, you can use the Scan Memory Space function. This function will discover all accessible memory ranges of the device.

## Immobilizer

- **Enter Security Code**

For the immobilizer-related operations a security code is required and because of that, they will remain inactive until a valid security code is entered. If the immobilizer is in reset state and the security code is not programmed, it will accept any code. **Please be sure in case of installing of a new immobilizer, to enter the security code of the vehicle in which it will be installed.**




Available immobilizer functions may differ depending on the immobilizer type. Once you enter a valid security code they will become active.

- **Reset immobilizer / Reset Security Code**

This function will set back the immobilizer ECU to its factory default state. Prior to replace, you have to reset the immobilizer back to its factory default state. In this way, you can install it into another car. This will also erase all transponder keys. Please note, that after using this function, you won't be able to start the engine.

- **Reset engine**

This function will set back the Engine Control Module to its factory default state. Prior to replace, you have to reset it back to its factory default state. In this way, you can install it into another car. You can verify the state of the engine ECU immobilizer in the measuring blocks information. **NOTE**: If this function is not available in the immobilizer diagnostic, the function should be available in the engine diagnostic.

- **Program immobilizer functions / Program Security Code**

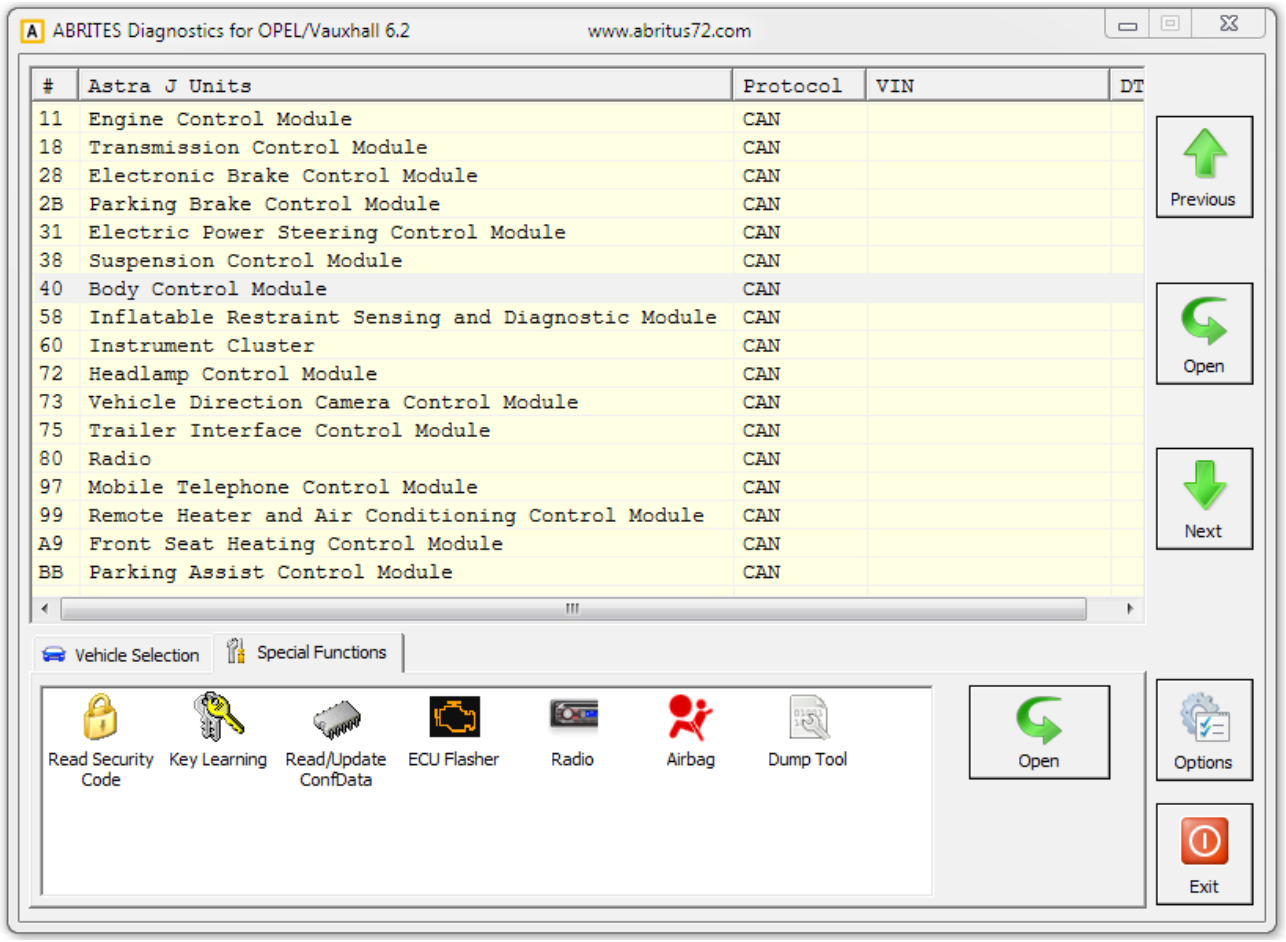
When you replace an immobilizer or an engine control module you should use this function to program a security code in the replaced components. **NOTE**: It will use the security code that you has been already enter to enable the immobilizer functions.

- **Program immobilizer output**

When you install an immobilizer in a car that is equipped with an Anti Theft Warning System (Alarm), you should program also and the immobilizer output.

## Special Functions

ABRITES Diagnostics for OPEL/Vauxhall provide some unique diagnostic functions, which are specific only to our product or they are not supported by the other similar diagnostic tools. These functions are separated in the Special Functions list.




### Read Security Code

Security code is required for any immobilizer-related operation. In general it can be found in the Car Pass or can be obtained from your local Opel dealer. Read Security Code function is an instrument for extracting the security code from the car and thereby eliminate the need from contacting the dealer. To read the security code you have to select make, model and the electronic control unit from which the security code should be extracted. The list of the units depend on the vehicle model and is updated whit every new software version.

Currently supported electronic control units:

| | |
|---|---|
| Electronic Brake Control Module (EBCM) | ASTRA J, CHEVROLET CRUZE |
| Engine C14NE | CORSA C |

| | |
|---|---|
| Delphi Delco - 1.4l (GM Brasil) | |
| Engine X14XE<br>Delphi Delco HSFI-C - 1.4l 16V MULTEC (H) | ASTRA G |
| Engine X16XEL<br>Delphi Delco HSFI-C - 1.6l 16V MULTEC (H) | ASTRA G, VECTRA B, ZAFIRA |
| Engine X18XE1<br>Siemens VDO Simtec 70 - 1.8l 16V | ASTRA G, VECTRA B, ZAFIRA |
| Engine X20XEV<br>Siemens VDO Simtec 70 - 2.0l 16V | ASTRA G, VECTRA B |
| Engine Y13DT<br>Magneti Marelli Multijet 6JO - 1.3l 16V CDTI | AGILA, CORSA C, TIGRA B |
| Engine Y17DIT<br>Delphi Delco HDRC - 1.7l 16V DTI | ASTRA G |
| Engine Y17DT<br>Delphi Delco HDRC - 1.7l 16V DTI | ASTRA G, CORSA C, MERIVA |
| Engine Y17DTL<br>Delphi Delco HDRC - 1.7l 16V DTI | ASTRA G, CORSA C, MERIVA |
| Engine Y20DTH<br>Bosch PSG16 - 2.0l 16V DTI | ASTRA G, ZAFIRA, VECTRA C |
| Engine Y22DTR<br>Bosch PSG16 - 2.2l 16V DTI | ASTRA G, ZAFIRA, VECTRA C |
| Engine Z10XE<br>Bosch Motronic ME 1.5.5 - 1.0l 12V | AGILA, CORSA C |
| Engine Z10XEP<br>Bosch Motronic 7.6.1 - 1.0l 16V | AGILA, CORSA C |
| Engine Z10XEP<br>Bosch Motronic 7.6.x - 1.0l 16V | CORSA D |
| Engine Z12XE<br>Bosch Motronic ME 1.5.5 - 1.2l 16V | AGILA, ASTRA G, CORSA C |
| Engine Z12XEP<br>Bosch Motronic 7.6.1 - 1.2l 16V | AGILA, CORSA C |
| Engine Z12XEP<br>Bosch Motronic 7.6.x - 1.2l 16V | ASTRA H, CORSA D |
| Engine Z13DTH<br>Magneti Marelli Multijet 6O2 - 1.3l 16V CDTI | ASTRA H, CORSA D |
| Engine Z13DT | AGILA, CORSA C, TIGRA B |

| | |
|---|---|
| Magneti Marelli Multijet 6JO - 1.3l 16V CDTI | |
| Engine Z14XE<br>Delphi Delco HSFI-2.1 - 1.4l 16V MULTEC (H) | ASTRA G, CORSA C, TIGRA B |
| Engine Z14XEL<br>Bosch Motronic 7.6.x - 1.4l 16V | ASTRA H |
| Engine Z14XEP<br>Bosch Motronic 7.6.1 - 1.4l 16V | ASTRA G, CORSA C, MERIVA, TIGRA B |
| Engine Z14XEP<br>Bosch Motronic 7.6.x - 1.4l 16V | ASTRA H, CORSA D |
| Engine Z16LER<br>Bosch Motronic 7.6.x - 1.6l 16V | CORSA D |
| Engine Z16LET<br>Bosch Motronic 7.6.x - 1.6l 16V | ASTRA H |
| Engine Z16XE, Z16SE<br>Delphi Delco HSFI-2.1 - 1.6l 16V MULTEC (H) | ASTRA G, CORSA C, MERIVA, ZAFIRA, VECTRA B |
| Engine Z16XE1<br>Delphi Delco MT35E | ASTRA H, ZAFIRA B |
| Engine Z16XE<br>Delphi Delco HSFI-2.2 - 1.6l 16V MULTEC (H) | VECTRA C |
| Engine Z16XEP<br>Delphi Delco HSFI 2.4 - 1.6l | ASTRA G, MERIVA |
| Engine Z16XEP<br>Delphi Delco MT35E | ASTRA H, VECTRA C, ZAFIRA B |
| Engine Z16XER<br>Siemens VDO SIMTEC 75 - 1.6l 16V | ASTRA H, ZAFIRA B |
| Engine Z17DTH, Z17DTL<br>Bosch EDC16C9 - 1.7l 16V CDTI | ASTRA H<br>Note: Not all software version of the ECM are supported |
| Engine Z18XE, Z18XEL<br>Siemens VDO SIMTEC 71.1 - 1.8l 16V | ASTRA G, CORSA C, MERIVA, TIGRA B, VECTRA B, ZAFIRA |
| Engine Z18XER<br>Siemens VDO SIMTEC 75 - 1.8l 16V | ASTRA H, VECTRA C, ZAFIRA B |
| Engine Z18XE<br>Siemens VDO SIMTEC 71.5/71.6 - 1.8l 16V | ASTRA H, VECTRA C |
| Engine Z19DT, Z19DTH, Z19DTL<br>Bosch EDC16C9 - 1.9l 16V CDTI | ASTRA H, VECTRA C, ZAFIRA B<br>Note: Not all software version of the ECM are supported |

| | |
|---|---|
| Engine Z20LEH<br>Bosch Motronic 7.6.x - 1.6l 16V | ASTRA H, ZAFIRA B |
| Engine Z20LEL<br>Bosch Motronic 7.6.x - 1.6l 16V | ASTRA H |
| Engine Z20LER<br>Bosch Motronic 7.6.x - 1.6l 16V | ASTRA H, ZAFIRA B |
| Engine Z20LET<br>Bosch Motronic ME 1.5.5 - 1.2l 16V | ASTRA G, ZAFIRA |
| Engine Z22SE<br>Delco - 2.2l 16V | ASTRA G, VECTRA B, ZAFIRA |
| Engine Z22XE<br>Siemens VDO SIMTEC 71 - 2.2l 16V | OMEGA B |
| Immobiliser | ASTRA F, CALIBRA, CORSA B, TIGRA, VECTRA B<br>Note: Works only, if pin code already has been entered correctly and the battery was not disconnected since then. |
| Info Display | ASTRA H, CORSA D, VECTRA C, ZAFIRA B |
| Instrument Panel Cluster | CORSA D, CORSA C, MERIVA, TIGRA B |

**Key Learning**

Key Learning is an instrument for programming transponder keys to immobilizer.

**ECU Flasher**

Currently supported electronic control units:

| | |
|---|---|
| X18XE1 - Siemens Simtec 70<br>read/write | ASTRA G, VECTRA B, ZAFIRA A |
| X20XEV - Siemens Simtec 70<br>read/write | ASTRA G, VECTRA B, ZAFIRA A |
| Y17DIT - Delphi Delco HDRC EURO2<br>read/write | ASTRA G |
| Y17DT - Delphi Delco HDRC<br>read/write | ASTRA G, CORSA C, MERIVA |
| Z10XE - Bosch Motronic ME 1.5.5<br>read/write | AGILA, CORSA C |
| Z10XEP - Bosch Motronic 7.6.1<br>read/write | AGILA, CORSA C |
| Z10XEP - Bosch Motronic 7.6.x | CORSA D |

| | |
|---|---|
| read/write | |
| Z12XE - Bosch Motronic ME 1.5.5 read/write | AGILA, ASTRA G, CORSA C |
| Z12XEP - Bosch Motronic 7.6.1 read/write | AGILA, CORSA C |
| Z12XEP - Bosch Motronic 7.6.x read/write | ASTRA H, CORSA D |
| Z13DTH - Magneti Marelli MJD 6O2 read/write | ASTRA H, CORSA D |
| Z14XEP - Bosch Motronic 7.6.x read/write | ASTRA H, CORSA D |
| Z16LEL - Bosch Motronic 7.6.x read/write | CORSA D |
| Z16LER - Bosch Motronic 7.6.x read/write | CORSA D |
| Z16LET - Bosch Motronic 7.6.x read/write | ASTRA H |
| Z16XE1 - Delphi Delco MT35E read/write | ASTRA H, ZAFIRA B |
| Z16XEP - Delphi Delco HSFI 2.4 read only | ASTRA G, MERIVA |
| Z16XEP - Delphi Delco MT35E read/write | ASTRA H, VECTRA C, ZAFIRA B |
| Z16XER - Siemens Simtec 75 read/write | ASTRA H, ZAFIRA B |
| Z18XE - Siemens Simtec 71.1 read/write | ASTRA G, CORSA C, MERIVA, TIGRA B, VECTRA B, ZAFIRA |
| Z18XE - Siemens Simtec 71.5 read/write | ASTRA H, VECTRA C |
| Z18XE - Siemens Simtec 71.6 read/write | ASTRA H, VECTRA C |
| Z18XER - Siemens Simtec 75 read/write | ASTRA H, VECTRA C, ZAFIRA B |
| Z20LEH - Bosch Motronic 7.6.x read/write | ASTRA H, ZAFIRA B |
| Z20LEL - Bosch Motronic 7.6.x read/write | ASTRA H |
| Z20LER - Bosch Motronic 7.6.x read/write | ASTRA H, ZAFIRA B |

| | |
|---|---|
| Z20LET - Bosch Motronic ME 1.5.5 read/write | ASTRA G, ZAFIRA A |
| Z22XE - Siemens Simtec 71 read/write | OMEGA B |

### Dump Tool

Dump Tool is an instrument for editing the content of the EEPROM files of specific electronic control units. You have to select a unit and load a dump file. Then when you click on the "Parameters..." button you will see a pop-up window with all available parameters related to the chosen unit. Typical parameters are odometer, security code and VIN. For the airbag units the option clear crash data is available. You can modify them by clicking on the parameter value. When complete with modifications click on the OK button. The dump data will be updated accordingly. All necessary check sums will be regenerated.

Note that the dump files are loaded in a hexadecimal editor, which can be used by advanced users as a tool for manual editing of the EEPROM content.

## Abbreviations

| | |
|---|---|
| ACC | Adaptive Cruise Control |
| AFL | Adaptive Forward Lighting |
| AHL | Automatic Headlamp Leveling |
| BCM | Body Control Module |
| CAN | Controller Area Network |
| CIM | Column Integrated Module |
| DTC | Diagnostic Trouble Code |
| ECM | Engine Control Module |
| ECU | Electronic Control Unit |
| EHPS | Electro Hydraulic Power Steering |
| EPS | Electro Power Steering |
| ESP | Electronic Stability Program |
| FZM | Front Zone Module |
| GMLAN | General Motors in vehicle Local Area Network |
| HVAC | Heating Ventilation and Cooling |
| IPC | Instrument Panel Cluster |
| PEPS | Passive Entry & Passive Start |
| REC | Rear Electrical Center |
| RZM | Rear Zone Module |
| SADS | Semi Active Damping System |
| SAS | Steering Angle Sensor |
| SLM | Shift Lever Module |
| TC | Traction Control |
| TCM | Transmission Control Module |
| TIM | Trailer Interface Module |
| TPMS | Tire Pressure Monitoring System |
| UEC | Underhood Electrical Centre |